**Course: \_MATH 6\_\_\_\_\_\_\_\_\_ CCSS Standard Number(s): \_\_6.EE.1\_\_\_\_\_\_\_\_\_\_\_\_ Day: \_\_\_8/28\_\_\_\_\_\_\_**

**Unit # and Title: \_Unit 1: Pre-asses, Intro Scenario, Base and Exponents\_\_ Block(s)/Period(s): 1 2 3 4 5 6**

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| **Unit Essential Question(s):** | **How are variables used in mathematics? How can we generate equivalent expressions?** | | |
| **Learning Target(s)**  **“I can statements”** | * I can explain the meaning of a number raised to a power. * I can write numerical expressions involving whole-number exponents. * I can evaluate numerical expressions involving whole-number exponents. | | |
| **Essential Vocabulary** | **Base, exponent, power, squared, cubed, exponential form/notation, standard form/notation, value** | | |
| **Resources and Materials** | **Teacher** | | **Student** |
| **On Core Teacher Edition (OCTE)**  **Holt McDougal Online Text**  **Website Below**  **Post-It**  **Copies of Preassessment**  **Unit 1 Engaging Scenario** | | **On Core**  **Math Notebook** |
| **8 Mathematical Practices:** | | | |
| 1. Make sense of problems and persevere in solving them.  2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  4. Model with mathematics. | | X 5. Use appropriate tools strategically.  X 6. Attend to precision.  7. Look for and make use of structure.  8. Look for and express regularity in repeated reasoning. | |
| **Activating Strategy**  **(Opening Activity)** | * **Teacher will read aloud engaging scenario:**   Every year in the Spring there is a county-wide Middle School Math Day Competition held for 6th - 8th grade students. This year your school has the honor of hosting the event and you have been asked to help organize the event. Your responsibilities will include planning refreshments and admission costs for the event, creating questions for the competition, scoring the assessment and setting up the floor plan and awards ceremony. As an added bonus, this year the event will be hosted live on GCS channel two and the superintendent will attend. How exciting!!   * **Teacher will inform the students that we will be revisiting the engaging scenario throughout the unit.** * **Teacher discusses the topics that will be covered during Unit 1 (exponents, GCF, LCM, expressions)** * **Students will be presented with an activating strategy that is related to the engaging scenario. The teacher will create a power point slide with the following information on it:**    + **Two students came to the Middle School Math Day competition at 9:00am. Four students come to the competition at 10:00am. An hour after that, eight more students arrived at the competition.**      - **What pattern do you notice in the number of students arriving each hour?**     - **Write out the pattern using only numbers.**     - **How many students will arrive at the competition at 12:00pm?**     - **How many students will arrive at the competition at 3:00pm?** * **OCTE P.59 Try This! (1a – 1i)**    + **Students will complete a table about hourly bacteria growth, paying attention to patterns.**   + **How does the number of total bacteria increase from row to row in the table?**   + **What does an exponent represent?** | | |
| **Cognitive Teaching Strategies**  **Me/We/Few/You**  **(TIP-Teacher input**  **SAP-Student actively participates**  **GP – Guided Practice**  **IP-Independent Practice)** | **We**   * **OCTE 3-1: Example 2**   + **Students will discover if an expression can be written as an exponent, after viewing various expressions and determining which is repeated multiplication.**     - **For example, teacher will write these examples on the board:**       * **2x3x5x9, 5x5x5x5x5, and 3x2x1**       * **5x5x5x5x5 demonstrates repeated multiplication and therefore can be written using exponents.**   + **Students will write given expressions using exponents.**     - **What is the base? How do you know?**     - **What is the exponent? How do you know?** * **OCTE 3-1: Example 3**   + **Students will find the value of a given power.**     - **For example, give the students 93**       * **What is the base? What is the exponent?**       * **How many times will the base appear as a product? Why?**       * **How do you find the value of a power?**     - **Give the students (1/2)4**        * **What do the parentheses around the fraction mean?**   **\*\*\*Remind students that you NEVER multiply the base by the exponent\*\*\***  **Few**   * **OCTE 3-1: Explore – Problem Solving Using Exponents**   + **Judah had two children. When those children grew up, each one also had two children, who later each had two children as well. If this pattern continues, how many children are there in the 7th generation? (Students may use a diagram)**     - **How many children are in each generation, 1-3?**     - **Find a pattern in the numbers using exponents.**     - **How is the number of children in a generation related to the generation number?**     - **How many people will be in the 7th generation?**     - **How would a diagram help you solve this problem?**     - **How do exponents help you solve this problem?**   + **A female guinea pig has about 4 litters per year, and a typical litter consists of 4 baby guinea pigs. How many baby guinea pigs would a typical female have in 4 years?**   **You**   * **OCTE 3-1: Practice (P.62)** | | |
| **Summarizing Strategy**  **(Closing Activity)** | **Ticket Out: Students will label the parts of an exponent, write using repeated multiplication, and find its value.**  **24**  **Students will tell how exponents are used to represent numbers.** | | |
| **Assessment/Homework** | **Holt 1-3 Challenge: Exponent Riddle**  **What is the greatest number that can be written with two digits?** | | |
| **Extending/Refining** | **Extension: Holt 1-3 Ready to Go On: Problem Solving**  **Intervention: Holt 1-3 Ready to Go On: Skills Intervention,**  **Teacher think aloud is supported by the following PowerPoint** [**http://www.wisc-online.com/objects/ViewObject.aspx?ID=ABM401**](http://www.wisc-online.com/objects/ViewObject.aspx?ID=ABM401) | | |